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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,934	07/11/2003	Denis G. Cauchon	DWE/CAUCHON IV	3029
32834	7590	07/06/2004	EXAMINER	
D.W. EGGINS 18 DOWNSVIEW DRIVE BARRIE, ON L4M 4P8 CANADA			GORDON, STEPHEN T	
			ART UNIT	PAPER NUMBER
			3612	

DATE MAILED: 07/06/2004

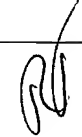
Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/616,934

Applicant(s)

CAUCHON, DENIS G. 

Examiner

Stephen Gordon

Art Unit

3612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7, 10, and 13 is/are allowed.
- 6) ☒ Claim(s) 6, 8, 9, 11, 12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. The disclosure is objected to because of the following informalities: the status of each parent application should be updated at the beginning of page 1 to reflect that each case is abandoned. Additionally, "???" on page 6 – line 11 should be deleted. On page 12, "14" on line 5, "44" on line 14, "58" on line 16, and "14" on line 19 should apparently be --18--, --14--, --42--, and --16-- respectively. The term "20" on page 12 in the last line is apparently included in error and should be deleted. On page 13, "58" on line 3 and "58" on line 9 should be --42-- and --42-- respectively.

Appropriate correction is required.

2. Claims 6, 8-9, 11-12, and 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 6, "said spring" at each occurrence (i.e. 2 places total) lacks clear antecedent basis. As best understood, "spring" in each term should be replaced with --spring-loaded tensioning means-- to clarify the claim.

Re claim 8, line 3 is somewhat awkward, and "in" could be deleted from the line to clarify the claim in this regard.

Re claim 9, "said teeth" in the last line lacks clear antecedent basis.

Re claim 11, "winch" should be deleted from line 1 for consistency/clarity of terminology. Additionally it is noted, "retain" bridging lines 6 and 7 should be a single term.

Re claim 15, "support" in line 10 should be --supporting-- for consistency/clarity. Additionally, "said torque bar" in line 11 should be --a torque bar-- for added

Art Unit: 3612

clarity. Finally, "said load winch" lacks clear antecedent basis, and "load" could be deleted from the term to clarify as best understood.

Re claim 16, , "winch" should be deleted from line 2 for consistency/clarity of terminology.

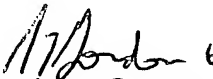
Re claim 17, "winch" should be deleted from each occurrence of "said winch first capstan portion" (i.e. 2 places total) for consistency/clarity of terminology.

3. Claims 6, 8-9, 11-12, and 14-17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
4. Claims 1-5, 7, 10, and 13 are allowed.
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note at least Thomas teaches a vehicle mounted winch.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Gordon whose telephone number is (703) 308-2556. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 6-25-04  
Stephen Gordon  
Primary Examiner  
Art Unit 3612

stg

## duplex cavity

282

covering of binding or protecting material. *See: power distribution, underground construction.* 64

**duplex cavity (radar).** *See: transmit-receive cavity (radar).*

**duplex channel.** *See: duplex operation.* 59

**duplexer (radar practice).** A device that utilizes the finite delay between the transmission of a pulse and the echo thereof so as to permit the connection of the transmitter and receiver to a common antenna. *Note:* A duplexer commonly employs a transmit-receive switch and an antitransmit-receive switch, though the latter is sometimes omitted. *See: radar.* 328

**duplexing assembly, radar.** *See: transmit-receive switch.*

**duplex lap winding (rotating machinery).** A lap winding in which the number of parallel circuits is equal to twice the number of poles. 63

**duplex operation (1) (data transmission).** (A) (General). The operation of transmitting and receiving apparatus at one location in conjunction with associated transmitting and receiving equipment at another location, the processes of transmission and reception being concurrent. (B) (Radio communication) (Two-way radio communication circuit). The operation utilizing two radio-frequency channels, one for each direction of transmission, in such manner that intelligence may be transmitted concurrently in both directions. 111, 59

(2) (radio communication) (two-way radio communication circuit). The operation utilizing two radio-frequency channels, one for each direction of transmission, in such manner that intelligence may be transmitted concurrently in both directions. 181

**duplex signaling (telephone switching systems).** A form of polar-duplex signaling for a single physical circuit. 55

**duplex switchboard (power switchgear).** A control switchboard consisting of panels placed back to back and enclosed with a top and ends (not grille). Access space with entry doors is provided between the rows of panels. 103

**duplex system.** A telegraph system that affords simultaneous independent operation in opposite directions over the same. *See: telegraphy* 328

**duplex type (breaker-and-a-half arrangement).** A unit substation which has two stepdown transformers, each connected to an incoming high-voltage circuit. The outgoing side of each transformer is connected to a radial (stub-end) feeder. These feeders are joined on the feeder side of the power circuit breakers by a normally open-tie circuit breaker. 53

**duplex wave winding (rotating machinery).** A wave winding in which the number of parallel circuits is four, whatever the number of poles. 63

**duplicate.** *See: copy*

**duplicate lines (power transmission).** Lines of substantially the same capacity and characteristics, normally operated in parallel, connecting the same supply point with the same distribution point. *See: center of distribution.* 64

**duplicate service (power transmission).** Two services, usually supplied from separate sources, of substantial-

ly the same capacity and characteristics. *Note:* The two services may be operated in parallel on the consumer's premises, but either one alone is of sufficient capacity to carry the entire load. *See: service; dual service; emergency service; loop service.* 64

**duplication check.** A check based on the consistency of two independent performances of the same task. 167,77

**duration (pulse terms).** The absolute value of the interval during which a specified waveform or feature exists or continues. 254

**dust-ignition-proof (class II locations) (National Electrical Code).** Enclosed in a manner that will exclude ignitable amounts of dusts or amounts that might affect performance or rating and that, where installed and protected in accordance with this Code, will not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specified dust on or in the vicinity of the enclosure. 256

**dust-ignition proof machine.** A totally enclosed machine whose enclosure is designed and constructed in a manner that will exclude ignitable amounts of dusts or amounts that might affect performance or rating, and that, when installation and protection are in conformance with the National Electrical Code (ANSI CI-1975; section 502-1), will not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specific dust on or in the vicinity of the enclosure. *See: asynchronous machine; direct-current commutated machine.* 232,63

**dustproof (1) (general).** So constructed or protected that the accumulation of dust will not interfere with successful operation. 225,206,102,202,27

(2) (enclosure). An enclosure so constructed or protected that any accumulation of dust that may occur within the enclosure will not prevent the successful operation of, or cause damage to, the enclosed equipment. 3

(3) (luminaire). Luminaire so constructed or protected that dust will not interfere with its successful operation. *See: luminaire.* 167

(4) (National Electrical Code). So constructed or protected that dust will not interfere with its successful operation. 256

**dustproof enclosure (electric installations on shipboard).** An enclosure so constructed or protected that any accumulation of dust that may occur within the enclosure will not prevent the successful operation of, or cause damage to, the enclosed equipment. 3

**dust-proof luminaire (illuminating engineering).** A luminaire so constructed or protected that dust will not interfere with its successful operation. 167

**dust seal (rotating machinery).** A sealing arrangement intended to prevent the entry of a specified dust into a bearing. *See: asynchronous machine; direct-current commutating machine.* 63

**dust-tight (National Electrical Code).** So constructed that dust will not enter the enclosing case under

## dust-tight

## dusttight

specified test conditions.

**dusttight (1) (enclosure).** that dust will n

(2) (luminaire) (tra) structured that dust under specified con

**dusttight enclosure (shipboard).** An enclosure cannot enter the enclosure (2) (power and distribution) so constructed under specification dust-tight luminaire so constructed enclosing case.

**duty (1) (general).** no-load and rest at the machine or apparatus duration and sequence (2) (rating of electrical operating condition) is subjected, the sequence in time. (3) (industrial commutator). A rating of the degree of regulation (4) (excitation system) loadings imposed by the excitation system conditions of load regulation of limiting machine loading at National Standard Rotor Synchronous

**duty continuous (thy).** the converter equipment fixed value for an components of the temperatures corresponding current.

**duty cycle (1) (general).** a device on intermittent stopping, and idling (2) (rotating machinery) time which may or the cycle time is to be attained. *See: current commutating (3) (pulse systems).* durations to the total of continuous operation (4) (welding) (National Electrical Code) age of the time during instance, a spot weld (216,000 cycles per hour) cycle welds per hour percent (400 multiplied by 100).

# Circulators and isolators

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Updated April 3, 2004

## Circulators

A circulator is a ferrite device (ferrite is a class of materials with strange magnetic properties) with usually three ports. The beautiful thing about circulators is that they are non-reciprocal. That is, energy into port 1 predominantly exits port 2, energy into port 2 exits port 3, and energy into port 3 exits port 1. In a reciprocal device the same fraction of energy that flows from port 1 to port 2 would occur to energy flowing the opposite direction, from port 2 to port 1.

The selection of ports is arbitrary, and circulators can be made to "circulate" either clockwise (CW) or counterclockwise (CCW).

A circulator is sometimes called a "**duplexer**", meaning that it duplexes two signals into one channel (e.g. transmit and receive into an antenna). This is not to be confused with the term "**diplexer**" which refers to a filter arrangement where two frequency bands are separated into two channels from a single three-terminal device. A lot of people mix up these terms. You can remember it because "filter" and "diplexer" both have an "i" in them, and "circulator" and "duplexer" both have a "u".

What are circulators good for? They make a great antenna interface for a transmit/receive system. Energy can be made to flow from the transmitter (port 1) to the antenna (port 2) during transmit, and from the antenna (port 2) to the receiver (port 3) during receive. Circulators have low electrical losses and can be made to handle huge powers, well into kilowatts. They usually operate over no more than an octave bandwidth, and are purely an RF component (they don't work at DC).



The return loss of a circulator is intimately related to its reverse isolation, and should always be specified to the same requirement. A circulator with 20 dB isolation will need to have a return loss of 20 dB. Think about it, if you terminate the third arm in a perfect 50 ohms, the clockwise isolation you will measure in a CCW circulator won't be better than the stray signal that is bouncing off the loaded port due to the reflected signal due to its mismatch to 50 ohms. A good rule of thumb is that a circulator's isolation is the same as its return loss.

## Isolators

**Signal Conditioners**  
Dataforth signal conditioning solutions. Online Catalog!  
[www.dataforth.com](http://www.dataforth.com)

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0.8 - 8.0 GHz, N and SMA-Female cell, GSM, UMTS, PCS, L, S, C bands  
[www.e-meca.com](http://www.e-meca.com)

**MIDISCO - RF & Microwave**  
Couplers, Pwr Div, Cable Assembly, Attenuators, Isolators, Detectors,  
[www.microwavedistributo](http://www.microwavedistributo)

**Signal Isolators**  
Signal Isolation and Conversion Field Configurable  
[www.sensorguys.com/si13](http://www.sensorguys.com/si13)

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# Circulators and isolators

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